

WHAT IS CLAIMED IS:

1 1. A development tunnel operable to receive a photographic film coated with a
2 developer solution, the development tunnel comprising a housing forming a development
3 chamber through which the coated film is transported, the development chamber operable
4 to maintain a relatively constant temperature and humidity of the coated film during
5 development of the film.

1 2. The development tunnel of Claim 1, wherein the housing is insulated.

1 3. The development tunnel of Claim 1, further comprising a heating system
2 operable to heat the coated film.

1 4. The development tunnel of Claim 3, wherein the heating system contacts
2 the coated film.

1 5. The development tunnel of Claim 1, wherein the housing substantially
2 surrounds the coated film during the development process.

1 6. The development tunnel of Claim 1, wherein a cross-section of the
2 development chamber is optimized for minimum volume.

1 7. The development tunnel of Claim 1, wherein the development chamber
2 includes an entry and an exit, wherein the entry and exit operable to reduce air flow
3 circulation through the development chamber.

1 8. The development tunnel of Claim 1, wherein the development chamber is
2 oriented horizontally to reduce convective air flow through the development chamber.

PATENT APPLICATION

1 9. The development tunnel of Claim 1, further comprising a control system
2 operable to monitor and control the temperature within the development chamber.

1 10. The development tunnel of Claim 1, wherein the temperature within the
2 development chamber is maintained substantially within the range of 40-80 degrees
3 centigrade.

1 11. The development tunnel of Claim 10, wherein the temperature within the
2 development chamber is maintained substantially within the range of 45-55 degrees
3 centigrade.

1 12. The development tunnel of Claim 1, wherein the relative humidity within
2 the development chamber is maintained substantially within the range of 80-100 percent
3 relative humidity.

1 13. The development tunnel of Claim 1, wherein humidity is supplied by
2 evaporation of the developer solution on a film leader coupled to the coated film.

1 14. The development tunnel of Claim 1 further comprising a humidification
2 system operable to increase humidity within the development chamber.

1 15. The development tunnel of Claim 1, further comprising a humidification
2 system operable to decrease humidity within the development chamber.

1 16. The development tunnel of Claim 1, further comprising a heating system
2 operable to maintain the temperature of the coated film.

1 17. The development tunnel of Claim 1, wherein the temperature of the film is
2 consistently maintained within 5 degrees Centigrade of a temperature profile.

PATENT APPLICATION

1 18. The development tunnel of Claim 17, wherein the temperature of the film
2 is consistently maintained within 1 degree Centigrade of a temperature profile.

1 19. A photographic film processing system comprising:
2 an applicator station operable to coat a developer solution onto a photographic
3 film;
4 a development station operable to receive the coated photographic film, wherein
5 the development station operates to heat coated photographic film in an air environment;
6 and
7 a transport system operable to transport the film.

1 20. The photographic film processing system of Claim 19, wherein the
2 applicator station includes a replaceable developer cartridge having a reservoir of
3 developer solution disposed within the cartridge.

1 21. The photographic film processing system of Claim 19, wherein the
2 applicator station includes a slot coater device operable to apply a relatively smooth layer
3 of developer solution onto the photographic film.

1 22. The photographic film processing system of Claim 19, further comprising
2 a scanning station operable to scan the photographic film and produce digital images.

1 23. The photographic film processing system of Claim 22, wherein the
2 scanning station scans the photographic film coated with developer solution.

1 24. The photographic film processing system of Claim 22, further comprising
2 a print station operable to print one or more digital images.

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Parameter	Unit	Value
Initial concentration	mol/L	0.01
Final concentration	mol/L	0.005
Initial volume	L	1.0
Final volume	L	2.0
Initial mass	g	0.1
Final mass	g	0.05
Initial pressure	atm	1.0
Final pressure	atm	0.5
Initial temperature	°C	25
Final temperature	°C	25
Initial pH		7.0
Final pH		7.0
Initial conductivity	μS/cm	100
Final conductivity	μS/cm	50
Initial turbidity	NTU	1.0
Final turbidity	NTU	0.5
Initial color	PCU	10
Final color	PCU	5
Initial odor		1.0
Final odor		0.5
Initial taste		1.0
Final taste		0.5
Initial hardness	mg/L	100
Final hardness	mg/L	50
Initial iron	mg/L	1.0
Final iron	mg/L	0.5
Initial manganese	mg/L	0.1
Final manganese	mg/L	0.05
Initial copper	mg/L	0.01
Final copper	mg/L	0.005
Initial lead	mg/L	0.001
Final lead	mg/L	0.0005
Initial cadmium	mg/L	0.0001
Final cadmium	mg/L	0.00005
Initial mercury	mg/L	0.00001
Final mercury	mg/L	0.000005
Initial selenium	mg/L	0.000001
Final selenium	mg/L	0.0000005
Initial arsenic	mg/L	0.0000001
Final arsenic	mg/L	0.00000005
Initial chromium	mg/L	0.00000001
Final chromium	mg/L	0.000000005
Initial cobalt	mg/L	0.000000001
Final cobalt	mg/L	0.0000000005
Initial nickel	mg/L	0.0000000001
Final nickel	mg/L	0.00000000005
Initial silver	mg/L	0.00000000001
Final silver	mg/L	0.000000000005
Initial gold	mg/L	0.000000000001
Final gold	mg/L	0.0000000000005
Initial platinum	mg/L	0.0000000000001
Final platinum	mg/L	0.00000000000005
Initial palladium	mg/L	0.00000000000001
Final palladium	mg/L	0.000000000000005
Initial rhodium	mg/L	0.000000000000001
Final rhodium	mg/L	0.0000000000000005
Initial ruthenium	mg/L	0.0000000000000001
Final ruthenium	mg/L	0.00000000000000005
Initial iridium	mg/L	0.00000000000000001
Final iridium	mg/L	0.000000000000000005
Initial osmium	mg/L	0.000000000000000001
Final osmium	mg/L	0.0000000000000000005
Initial boron	mg/L	0.0000000000000000001
Final boron	mg/L	0.00000000000000000005
Initial fluorine	mg/L	0.00000000000000000001
Final fluorine	mg/L	0.000000000000000000005
Initial chlorine	mg/L	0.000000000000000000001
Final chlorine	mg/L	0.0000000000000000000005
Initial bromine	mg/L	0.0000000000000000000001
Final bromine	mg/L	0.00000000000000000000005
Initial iodine	mg/L	0.00000000000000000000001
Final iodine	mg/L	0.000000000000000000000005
Initial sulfur	mg/L	0.000000000000000000000001
Final sulfur	mg/L	0.0000000000000000000000005
Initial nitrogen	mg/L	0.0000000000000000000000001
Final nitrogen	mg/L	0.00000000000000000000000005
Initial oxygen	mg/L	0.00000000000000000000000001
Final oxygen	mg/L	0.000000000000000000000000005
Initial hydrogen	mg/L	0.0000000000000000000000000001
Final hydrogen	mg/L	0.00000000000000000000000000005

PATENT APPLICATION

1 33. The photographic film processing system of Claim 30, wherein the
2 temperature within the development chamber is maintained substantially within the range
3 of 45-60 degrees Centigrade.

1 34. The photographic film processing system of Claim 28, wherein the
2 transport system comprises a leader transport system and the developer solution is coated
3 onto a film leader to produce humidity within the development chamber.

1 35. The photographic film processing system of Claim 28, wherein the relative
2 humidity within the development chamber is maintained substantially within the range of
3 80-100 percent relative humidity.

1 36. The photographic film processing system of Claim 19, wherein the
2 development station operates to heat the photographic film to a temperature substantially
3 within the range of 40-80 degrees Centigrade.

1 37. The photographic film processing system of Claim 19, wherein the
2 development station includes a halt station operable to substantially stop the continued
3 development of the photographic film.

1 38. The photographic film processing system of Claim 19, wherein the
2 development station includes a film dryer operable to dry the developer solution onto the
3 photographic film.

1 39. The photographic film processing system of Claim 19, wherein the
2 photographic film processing system is embodied as a self-service kiosk.

PATENT APPLICATION

1 40. The photographic film processing system of Claim 19, wherein the
2 development station further comprises a heating system operable to maintain the
3 temperature of the coated film.

1 41. The photographic film processing system of Claim 19, wherein the
2 development station consistently maintains the temperature of the film within 5 degrees
3 Centigrade of a temperature profile.

1 42. The photographic film processing system of Claim 41, wherein the
2 development station consistently maintains the temperature of the film within 1 degree
3 Centigrade of a temperature profile.

1 43. A method of processing a photographic film comprising:
2 coating a development solution onto the photographic film; and
3 transporting the coated photographic film through an air environment
4 development station, wherein the development station operates to heat the coated
5 photographic film during development of the coated photographic film.

1 44. The method of Claim 43, wherein development station heats the coated
2 photographic film to a temperature substantially within a range of 40-80 degrees
3 Centigrade.

1 45. The method of Claim 44, wherein the development station heats the coated
2 photographic film to a temperature substantially within a range of 45-60 degrees
3 Centigrade.

1 46. The method of Claim 43, wherein the development station also operates to
2 substantially control the humidity during development of the coated photographic film.

PATENT APPLICATION

1 47. The method of Claim 46, wherein the humidity is substantially maintained
2 within the range of 80-100 percent humidity.

1 48. The method of Claim 43, wherein the development station includes a
2 development tunnel having a housing that forms a development chamber through which
3 the coated photographic film is transported.

1 49. The method of Claim 48, wherein the development tunnel includes a
2 heating system operable to heat the coated photographic film.

1 50. The method of Claim 48, wherein the development tunnel is insulated.

1 51. The method of Claim 43, further comprising scanning the developed film
2 to produce digital images.

1 52. The method of Claim 51, wherein scanning the developed film comprises
2 scanning the developed film through the coating of developer solution.

1 53. The method of Claim 51, further comprising displaying the digital images
2 to a user.

1 54. The method of Claim 51, further comprising printing one or more digital
2 images.

1 55. The method of Claim 43, wherein the developer solution is coated onto the
2 photographic solution using a slot coater device.

1 56. The method of Claim 43, wherein the developer solution is coated onto the
2 photographic solution using a replaceable developer cartridge.

PATENT APPLICATION

- 1 57. The method of Claim 43, wherein the processing of the photographic film
2 takes place in self-service kiosk.

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"SELF-SERVICE"